

CLAIMS

Therefore, having thus described the invention, at least the following is claimed:

1. A media content recording system in a subscriber network television system, comprising:
 - a memory for storing logic;
 - a storage device comprising a buffer space for continuously buffering media content instances; and
 - a processor configured with the logic to represent each of the media content instances in the buffer space as a management file.
2. The system of claim 1, wherein the processor is further configured with the logic to represent the media content instance in the buffer space with the corresponding management file in the memory, wherein the logic is further configured to track the duration of the buffered media content instance.
3. The system of claim 2, wherein the duration of the media content instance corresponds to hard disk space.
4. The system of claim 2, wherein the duration of the media content instance corresponds to a real-time playback duration.
5. The system of claim 1, wherein the processor is further configured with the logic to receive media content information from a remote server, wherein the media content information comprises a scheduled media content instance start time and a scheduled media content instance end time.
6. The system of claim 5, wherein the processor is further configured with the logic to track when the buffering of the media content instance starts.
7. The system of claim 5, wherein the processor is further configured with the logic to determine the media content instance duration by subtracting the media content instance buffering start time from the scheduled media content instance end time.

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1 8. The system of claim 1, wherein the processor is further configured with the logic
2 to configure the management file as a data structure that includes media content instance
3 guide data, a buffering start time, an active playback location within the media content
4 instance in the buffer space, a status flag, and a media content instance file name.

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1 9. The system of claim 1, wherein the processor is further configured with the logic
2 to organize a plurality of management files as a linked list of the management files
3 comprising the locations of data for said files and locations to a previously created
4 management file and to a subsequently created management file.

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1 10. The system of claim 1, wherein the processor is further configured with the logic
2 to organize a plurality of management files as a linked list of pointers to the management
3 files.

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1 11. The system of claim 1, wherein the processor is further configured with the logic
2 to use and store the scheduled stop time of a media content instance from media content
3 instance guide data to determine when to close the management file for said ended media
4 content instance and open a new management file for the next media content instance to
5 be downloaded to the buffer space.

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1 12. The system of claim 1, wherein the processor is further configured with the logic
2 to use the receipt time of a media content instance into the buffer space by using the start
3 time as indicated by an internal clock.

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1 13. The system of claim 1, wherein the processor is further configured with the logic
2 to configure each of the media content instances as media content instance files, wherein
3 the processor is further configured with the logic to identify each of the media content
4 instance files by file names.

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1 14. The system of claim 13, wherein the processor is further configured with the logic
2 to randomly generate the file names of each of the media content instance files.

1 15. The system of claim 13, wherein the processor is further configured with the logic
2 to generate the media content instance file names using the media content instance guide
3 data.

1 16. The system of claim 15, wherein each of the media content instance file names
2 include channel number, media content instance title, and the source of the media content
3 instance.

1 17. The system of claim 1, wherein the processor is further configured with the logic
2 to buffer analog broadcast media content instances, received at a communications
3 interface, as digitally compressed media content instances.

1 18. The system of claim 1, wherein the processor is further configured with the logic
2 to buffer an analog signal received at a connector from a consumer electronics device, as
3 a digitally compressed media content instance.

1 19. The system of claim 1, wherein the processor is further configured with the logic
2 to buffer digital broadcast media content instances, received at a communications
3 interface, as digitally compressed media content instances.

1 20. The system of claim 1, wherein the processor is further configured with the logic
2 to buffer digital media-on-demand media content instances, received at a communications
3 interface from a remote server, as digitally compressed media content instances.

1 21. The system of claim 1, wherein the processor is further configured with the logic
2 to buffer digital media content instances, received at a digital communications port from a
3 local network, as digitally compressed media content instances.

1 22. The system of claim 1, wherein the processor is further configured with the logic
2 to buffer digital media content instances, received at a digital communications port from a
3 local device, as digitally compressed media content instances.

1 23. The system of claim 1, wherein the processor is further configured with the logic
2 to maintain a status flag in the management file wherein the status flag is configured as

temporary for a buffered media content instance that is not designated for permanent recording.

24. The system of claim 23, wherein the processor is further configured with the logic to configure the status flag of the management file for a buffered media content instance as permanent when the user requests that said media content instance be permanently recorded, wherein the processor is further configured with the logic to cause the permanently recorded media content instance to have a permanent designation in a file allocation table in response to having status flag of the corresponding management file configured as permanent, such that the buffer space storing the permanently recorded media content instance becomes designated as non-buffer space.

25. A media content recording system in a subscriber network television system, comprising:

- a memory for storing logic;
- a storage device comprising a buffer space for continuously buffering media content instances; and
- a processor configured with the logic to buffer media content instances into the buffer space, wherein the processor is further configured with the logic to represent the media content instances in the buffer space as a linked list of management files in the memory, wherein the logic is further configured to track the duration of the buffered media content instance, wherein the duration of the media content instance corresponds to hard disk space, wherein the management files comprise the locations of data for said files and locations to a previously created management file and to a subsequently created management file, wherein the processor is further configured with the logic to configure each of the management files as a data structure that includes media content instance guide data, a buffering start time, an active playback location within the media content instance in the buffer space, a status flag, and a media content instance file name, wherein the processor is further configured with the logic to use and store the scheduled stop time of each of the media content instances from the media content instance guide data to determine when to close the management file for an ended media content instance and open a new

management file for a next media content instance to be downloaded to the buffer space, wherein the processor is further configured with the logic to receive media content information from a remote server, wherein the media content information comprises a scheduled media content instance start time and a scheduled media content instance end time, wherein the processor is further configured with the logic to track when the buffering of the media content instance starts, wherein the processor is further configured with the logic to determine the media content instance duration by subtracting the media content instance buffering start time from the scheduled media content instance end time, wherein the processor is further configured with the logic to organize a plurality of management files as a linked list of the management files comprising the locations of data for said files and locations to a previously created management file and to a subsequently created management file, wherein the processor is further configured with the logic to use the receipt time of a media content instance into the buffer space by using the start time as indicated by an internal clock, wherein the processor is further configured with the logic to configure the media content instances as media content instance files, wherein the processor is further configured with the logic to identify the media content instance files by file names, wherein the processor is further configured with the logic to generate the media content instance file names using the media content instance guide data, wherein each of the media content instance file names include channel number, media content instance title, and the source of the media content instance, wherein the processor is further configured with the logic to access the media content instances by the media content instance file names, wherein the processor is further configured with the logic to buffer analog broadcast media content instances, received at a communications interface, as digitally compressed media content instances, wherein the processor is further configured with the logic to buffer an analog signal received at a connector from a consumer electronics device, as a digitally compressed media content instance, wherein the processor is further configured with the logic to buffer digital broadcast media content instances, received at a communications interface, as digitally compressed media content

instances, wherein the processor is further configured with the logic to buffer digital media-on-demand media content instances, received at a communications interface from a remote server, as digitally compressed media content instances, wherein the processor is further configured with the logic to buffer digital media content instances, received at a digital communications port from a local network, as digitally compressed media content instances, wherein the processor is further configured with the logic to buffer digital media content instances, received at a digital communications port from a local device, as digitally compressed media content instances, wherein the processor is further configured with the logic to maintain the status flag in the management file wherein the status flag is configured as temporary for a buffered media content instance that is not designated for permanent recording, wherein the processor is further configured with the logic to configure the status flag of the management file for a buffered media content instance as permanent when the user requests that said media content instance be permanently recorded, wherein the processor is further configured with the logic to cause the permanently recorded media content instance to have a permanent designation in a file allocation table in response to having the status flag of the corresponding management file configured as permanent, such that the buffer space storing the permanently recorded media content instance becomes designated as non-buffer space.

26. A media content recording method in a subscriber network television system, comprising the steps of:

buffering media content instances into a buffer space; and
representing each of the buffered media content instances as a management file.

27. The method of claim 26, further comprising the steps of representing each of the media content instance in the buffer space with the corresponding management file in the memory, and tracking the duration of each of the buffered media content instances.

28. The method of claim 27, wherein the duration of each of the media content instances corresponds to hard disk space.

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1 29. The method of claim 27, wherein the duration of each of the media content
2 instances corresponds to a real-time playback duration.

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1 30. The method of claim 27, further comprising the step of receiving media content
2 information from a remote server, wherein the media content information comprises a
3 scheduled media content instance start time and a scheduled media content instance end
4 time.

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1 31. The method of claim 27, further comprising the step of tracking when the
2 buffering of the media content instance starts.

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1 32. The method of claim 27, further comprising the step of determining the media
2 content instance duration by subtracting the media content instance buffering start time
3 from the scheduled media content instance end time.

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1 33. The method of claim 26, further comprising the step of configuring the
2 management file as a data structure that includes media content instance guide data, a
3 buffering start time, an active playback location within the media content instance in the
4 buffer space, a status flag, and a media content instance file name.

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1 34. The method of claim 26, further comprising the step of organizing a plurality of
2 management files as a linked list of the management files comprising the locations of data
3 for said files and locations to a previously created management file and to a subsequently
4 created management file.

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1 35. The method of claim 26, further comprising the step of organizing a plurality of
2 management files as a linked list of pointers to the management files.

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1 36. The method of claim 26, further comprising the step of using and storing the
2 scheduled stop time of a media content instance from media content instance guide data
3 to determine when to close the management file for said ended media content instance
4 and open a new management file for the next media content instance to be downloaded to
5 the buffer space.

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1 37. The method of claim 26, further comprising the step of using the receipt time of a
2 media content instance into the buffer space by using the start time as indicated by an
3 internal clock.

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1 38. The method of claim 26, further comprising the steps of configuring each of the
2 media content instances as media content instance files, and identifying each of the media
3 content instance files by file names.

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1 39. The method of claim 38, further comprising the step of randomly generating the
2 file names of each of the media content instance files.

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1 40. The method of claim 38, further comprising the step of generating the media
2 content instance file names using the media content instance guide data.

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1 41. The method of claim 40, wherein the media content instance file name includes
2 channel number, media content instance title, and the source of the media content
3 instance.

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1 42. The method of claim 26, further comprising the step of buffering analog broadcast
2 media content instances, received at a communications interface, as digitally compressed
3 media content instances.

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1 43. The method of claim 26, further comprising the step of buffering an analog signal
2 received at a connector from a consumer electronics device, as a digitally compressed
3 media content instance.

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1 44. The method of claim 26, further comprising the step of buffering digital broadcast
2 media content instances, received at a communications interface, as digitally compressed
3 media content instances.

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1 45. The method of claim 26, further comprising the step of buffering digital media-
2 on-demand media content instances, received at a communications interface from a
3 remote server, as digitally compressed media content instances.

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1 46. The method of claim 26, further comprising the step of buffering digital media
2 content instances, received at a digital communications port from a local network, as
3 digitally compressed media content instances.

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1 47. The method of claim 26, further comprising the step of buffering digital media
2 content instances, received at a digital communications port from a local device, as
3 digitally compressed media content instances.

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1 48. The method of claim 26, further comprising the step of maintaining a status flag in
2 the management file wherein the status flag is configured as temporary for a buffered
3 media content instance that is not designated for permanent recording.

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1 49. The method of claim 48, further comprising the steps of configuring the status flag
2 of the management file for a buffered media content instance as permanent when the user
3 requests that said media content instance be permanently recorded, and causing the
4 permanently recorded media content instance to have a permanent designation in a file
5 allocation table in response to having status flag of the corresponding management file
6 configured as permanent, such that the buffer space storing the permanently recorded
7 media content instance becomes designated as non-buffer space.

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1 50. A media content recording method in a subscriber network television system,
2 comprising the steps of:

- 3 buffering media content instances into a buffer space;
4 representing the media content instances in the buffer space as a linked list of
5 management files in the memory;
6 tracking the duration of the buffered media content instance, wherein the duration
7 of the media content instance corresponds to hard disk space, wherein the
8 management files comprise the locations of data for said files and
9 locations to a previously created management file and to a subsequently
10 created management file;
11 configuring each of the management files as a data structure that includes media
12 content instance guide data, a buffering start time, an active playback

13 location within the media content instance in the buffer space, a status flag,
14 and a media content instance file name;
15 using and store the scheduled stop time of each of the media content instances
16 from the media content instance guide data to determine when to close the
17 management file for an ended media content instance and open a new
18 management file for a next media content instance to be downloaded to the
19 buffer space;
20 receiving media content information from a remote server, wherein the media
21 content information comprises a scheduled media content instance start
22 time and a scheduled media content instance end time;
23 tracking when the buffering of the media content instance starts;
24 determining the media content instance duration by subtracting the media content
25 instance buffering start time from the scheduled media content instance
26 end time;
27 organizing a plurality of management files as a linked list of the management files
28 comprising the locations of data for said files and locations to a previously
29 created management file and to a subsequently created management file;
30 using the receipt time of a media content instance into the buffer space by using
31 the start time as indicated by an internal clock;
32 configuring the media content instances as media content instance files;
33 identifying the media content instance files by file names;
34 generating the media content instance file names using the media content instance
35 guide data, wherein each of the media content instance file names include
36 channel number, media content instance title, and the source of the media
37 content instance;
38 accessing the media content instances by the media content instance file names;
39 buffering analog broadcast media content instances, received at a communications
40 interface, as digitally compressed media content instances;
41 buffering an analog signal received at a connector from a consumer electronics
42 device, as a digitally compressed media content instance;
43 buffering digital broadcast media content instances, received at a communications
44 interface, as digitally compressed media content instances;

45 buffering digital media-on-demand media content instances, received at a
46 communications interface from a remote server, as digitally compressed
47 media content instances;
48 buffering digital media content instances, received at a digital communications
49 port from a local network, as digitally compressed media content
50 instances;
51 buffering digital media content instances, received at a digital communications
52 port from a local device, as digitally compressed media content instances;
53 maintaining the status flag in the management file wherein the status flag is
54 configured as temporary for a buffered media content instance that is not
55 designated for permanent recording;
56 configuring the status flag of the management file for a buffered media content
57 instance as permanent when the user requests that said media content
58 instance be permanently recorded; and
59 causing the permanently recorded media content instance to have a permanent
60 designation in a file allocation table in response to having the status flag of
61 the corresponding management file configured as permanent, such that the
62 buffer space storing the permanently recorded media content instance
63 becomes designated as non-buffer space.